




INDIANA  
**LIMESTONE**  
THE ARISTOCRAT OF BUILDING MATERIALS

JOHN RUSSELL POPE, N. Y., ARCHITECT

*" . . . Dull would be he of soul who could pass by  
A sight so touching in its majesty."—WORDSWORTH*



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# INDIANA LIMESTONE

THE ARISTOCRAT OF BUILDING MATERIALS

69



Seal of the University of Indiana carved in Indiana Limestone for the exterior of the 'Old College Building' in 1855 and still perfect (See page 29)

Indiana Limestone Quarrymen's Association  
BEDFORD, INDIANA      or      BLOOMINGTON, INDIANA

## List of Indiana Limestone Booklets Published or in Process of Publication

- 1 Indiana Limestone.
- 2 Indiana Limestone for Office Buildings.
- 3 Indiana Limestone for Churches.
- 4 The Indiana Limestone Bank Book.
- 5 Perfect for Residences—Indiana Limestone.
- 6 Use of Indiana Limestone in School Buildings.
- 7 Distinction in Club Houses.
- 8 Indiana Limestone—Nature's Gift to the New Library.
- 9 The Public Choice for Public Buildings.
- 10 For Dignity—Indiana Limestone Trim.
- 11 Where Indiana Limestone Should be Used for Interiors.
- 12 Dignity Plus Delicacy in Mantels.
- 13 The Apartment Building—Where "Class" Pays Cash.
- 14 Pergolas and Garden Decoration in Indiana Limestone.
- 15 "Mixed Stone," the Jewel of the Quarry.
- 16 The Porch that "Makes" the Building (and "stays put.")
- 17 The Finer Buildings of America (an illustrated list.)
- 18 When Indiana was an Ocean.  
(Formation of Indiana Limestone.)
- 19 The Sculptor's Stone.
- 20 Indiana Limestone in Public Monuments.
- 21 Mausoleums and Private Monuments.
- 22 The Indiana Limestone Social Register.  
(Prominent Limestone Houses and their Owners.)
- 23 The Architect's View of It.
- 24 Limestone "Quaintoddities." (Odd effects with Crow's feet,  
fossils, American Travertine, etc.)
- 25 Designing to Keep the Cost Down.  
(A few simple rules.)
- 26 "Fire-and-Water Resistance."

(THIS BOOKLET IS VOLUME D)

## Note

THIS book, being Volume I of the Indiana Limestone Library, is intended to have interest and to contain information in some degree for both architects and laymen. It does not, by any means, pretend to cover the subject of Indiana Limestone completely.

A number of other booklets, each covering a particular aspect of the use of Indiana Limestone, are being prepared. Their approximate titles appear on the page opposite, and we shall be glad to send you any you may indicate as they are issued.

Meanwhile the Indiana Limestone Quarrymen's Association will be glad to answer any specific questions or give any help in its power with regard to Indiana Limestone, its qualities, uses, etc. It will also be glad to furnish to architects samples of the stone to illustrate any points which may be in question.

Address

Indiana Limestone Quarrymen's  
Association

Bedford, Indiana                      or                      Bloomington, Indiana





Trinity Building, New York City; Francis H. Kimball, Architect. Indiana Limestone from sidewalk to skyline, like many of the greatest and most beautiful office buildings in New York, Chicago and other large cities.

**E**VER since the days when it took one or two months in a sailing vessel to go to Europe, Americans, in constantly increasing numbers, have made the trip; made it mostly as a pilgrimage to the art and architecture of the Old World. They have worshiped at the shrines of sincere art and sincere craftsmanship.

Before the great Gothic cathedrals (largely built of limestone, by the way) they have stood in awe pointing out one to another the elaborate stone sculpture and tracery, the feathery spires and pinnales; with knowing looks they have called the attention to the wonderful craftsmanship of the stone walls and buttresses, to the manner in which stones have been chosen, not for their absolute likeness in color, nor for their perfect similarity of texture, but for the infinitely delicate variety of both tone and texture which they show, thereby making even the plainest and most uneventful surfaces of walls interesting and attractive to the eye.

Having paid their esthetic respects, no doubt from the fullness of their hearts, to the works of the Old World masters; having had their holiday and turned "back to the plow," as they say, they have (with a small but very rapidly growing class of exceptions) forgotten all the nobility and beauty which is possible to architecture and built their own buildings by radically different standards or by no apparent standards at all.

When they have used brick it has been because there happened to be a brickyard handy; when they have used stone it has been because there was a quarry nearer than the nearest saw mill; when they have used terra cotta it has been because some clever salesman has talked them into a fleeting admiration for the Yankee ingenuity and American commercial sufficiency which has made a clever imitation of genuine stone out of clay, shaped into a hollow shell and glazed like a pickle crock.

At about the time of the Civil War a few of the excellencies of Indiana Limestone as an architectural material came to the attention of a small public. From the time when the first earload was shipped to Chicago from Bedford, down to





Shelby County Courthouse, Memphis, Tennessee. Hale & Rogers, Architects.  
A fine example of massive beauty in Indiana Limestone.



the present day, the use of Indiana Limestone in all the worthier sorts of buildings has increased by leaps and bounds until today a substantial proportion of all the monumental buildings of the country are built of it.

But one of the best qualities of the stone and the one which was largely instrumental in the calling attention to it, namely, its uniformity and easy working quality has, in a measure, proved to be to its detriment. Quantities of perfectly homogeneous fine grain stone being available, builders, in spite of the lessons of European architecture and despite the fact that three distinct kinds of Indiana Limestone are to be found in every quarry, have until late years made it a practice to insist upon absolute uniformity in tone, color and texture throughout a building. Although many wonderful buildings have been built in this way, the practice has in a measure robbed the stone of its distinction and increased the temptation to use factory-made substitutes in its place.

Happily this practice, except in cases where for special reasons uniformity is desired, is decidedly on the wane; and, through the new American demand for sincerity in artistic expression, which is only possible in a worthy and *genuine* material, Indiana Limestone, "The Aristocrat of Building Materials," has come into its own.

Why we, living on an Earth which is nothing but one great solid rock covered with a thin skim of soil and water; why we, with the authority of the whole history of human civilization to lead us in the direction of stone for a building material, should permit ourselves, even temporarily, to be turned away from it or to express ourselves in it wrongly, it is hard to see. The only likely explanation seems to be the youth of the American nation and its youthful enthusiasm for commercial efficiency.

Many of us get even more enthusiastic over a clever imitation or a substitute that "will do" (if it is salable) than we do over the original, worthy, true and genuine thing on which the imitation is based. Of course this state of mind is wrong and with the zealous assistance of the sincere and able architects of the country it is rapidly giving way.



Calvary Church, Pittsburgh; Cram, Goodhue & Ferguson, Architects.  
From piers to pinnacles all Indiana Limestone. - The full height of the  
noble spire is included in this statement.

## Limestone

Limestone, because of its especially grateful qualities, has always easily held the leadership among building stones wherever it could be had at all. The Pyramids are built of it. All Continental countries are filled with beautiful and historic examples of its use. Most of the great Gothic cathedrals are wrought from it. Westminster Abbey, St. Paul's Cathedral, and the Houses of Parliament in London are all Limestone—Oölitic Limestone. They stand among the greatest and most beautiful of man's works of building art, venerable and perfectly preserved—and Limestone they are built of.

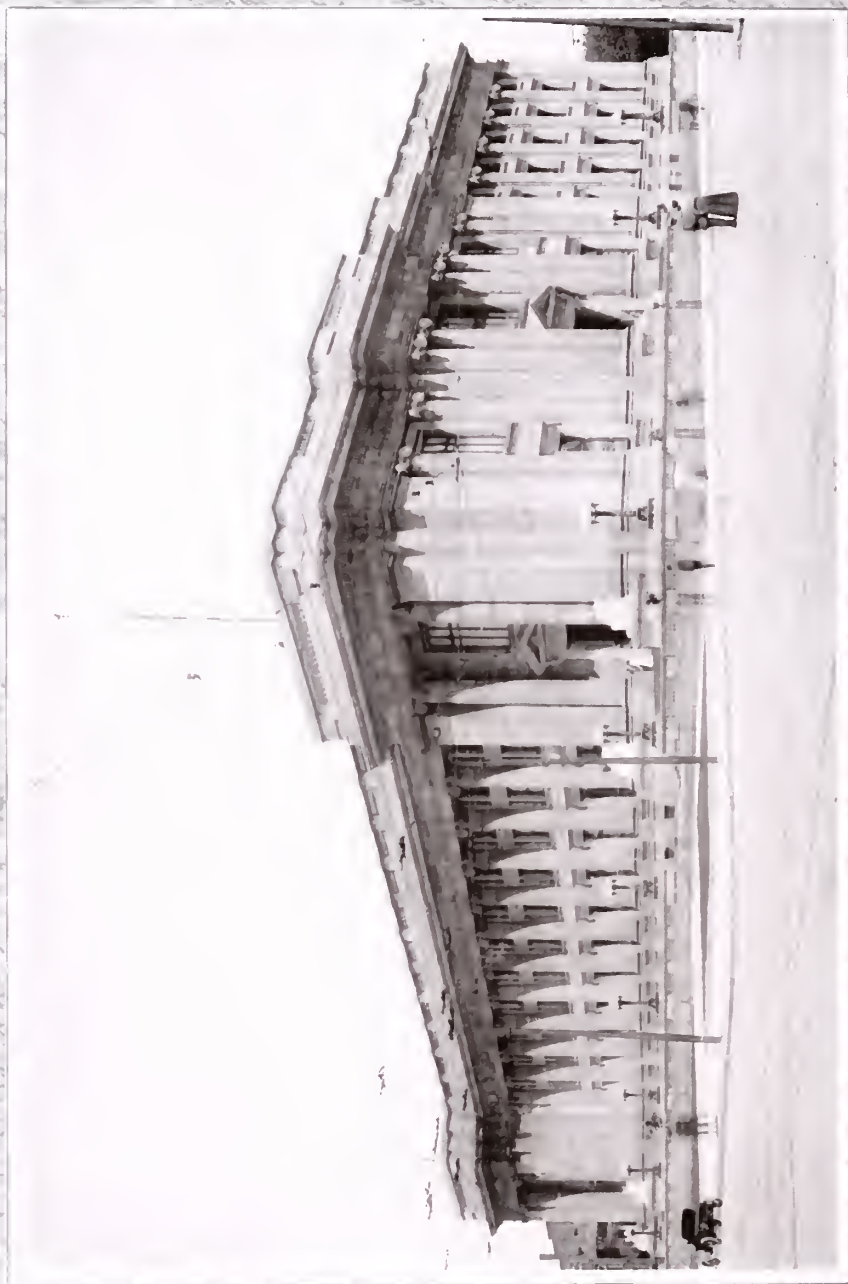
## Indiana Limestone

Yet the celebrated Portland Limestone of England, which is undoubtedly the best European building stone, is but a poor second to that great deposit which occurs in Lawrence and Monroe counties, Indiana, known geologically as the Indiana Oölitic Limestone. Although a great proportion of all kinds of buildings of any importance in the United States are of this material, its importance is but half realized and comparatively few people even know it by name.

~ Indiana Limestone is just the sum of all the qualities which an architect, an engineer and a prospective builder together could ask for in a building material. It is beautiful in color and in texture; it is extremely strong. It can be worked with the greatest ease. Yet, even when finely carved, it is, from any practical standpoint, everlasting. It is abundant, and this with its easily workable quality makes it far from costly. Its fire resisting quality is very high. It can be had in blocks of practically any size. Finally, it bears upon its face the stamp of the original, the true and genuine, product of the great unfaltering hand of Nature, which has placed it far above the power of man's efforts to imitate.

In beauty, and dignity, the first consideration in a building material, Indiana Limestone is beyond compare. First, it is to be had in *three colors*, all of which come out of practically every quarry. Thus a choice of effects can be had.





Federal Government Building and Post Office, Indianapolis, Indiana. A large proportion of all United States Post Offices are now built of Indiana Limestone, because the stone has stood not only the test of use, but the searching scientific tests of the Government laboratories.

### **“Buff” Indiana Limestone**

The color in most general use is the so-called “buff” Indiana Limestone. As in so many other cases, the common name describes “buff” Limestone but poorly. When it comes from the quarry it is what might perhaps be called a sort of buff, but on exposure to the air it quickly changes to a beautiful yellowish gray which never alters thereafter, except for the better, though exposed to all sorts of atmospheric conditions, for hundreds of years. Since, in our “young country,” Indiana Limestone has been used for building only about fifty years, this would seem at first sight a hard thing to prove. But it must be remembered that we are talking of civilization’s first building material, the “Rock of Ages,” part and parcel of Mother Earth. It is the naturally exposed ledges of Indiana Limestone, prey to the elements for untold centuries, which prove the permanence of it in color as well as in form.

### **“Blue” Indiana Limestone**

Again with the “blue” Limestone does the common name go wide of the mark. When freshly quarried the blue stone is really a rather dark bluish-gray, which changes on seasoning, that is, exposure to light and air, to a silvery hazy gray very pleasing to the eye. In the color, both of buff and of blue stone, there is an indescribable softness, suggestive, in its more rugged way, of the bloom on a plum.

### **“Mixed” Indiana Limestone**

The rarer Limestone of mixed colors, commonly called “mixed stone,” occurs only in a single layer in each quarry where the buff stone joins the blue. It is variegated in color, no two blocks being exactly alike, and is therefore capable of producing, when laid up in the wall of a building, an effect of infinite and beautiful variety sometimes described as “vibrant.” Even the plainest unbroken wall may be rendered interesting by the effect of texture which mixed stone gives. Properly handled by a skillful architect it can also be so used as to convey the impression of dignified age in a new building.



Fourth Presbyterian Church, Chicago; Cram, Goodhue & Ferguson, Architects; Howard Shaw, Associate Architect. "Mixed" Indiana Limestone throughout. Note the delicate and interesting variety of tone in the walls due to the rare beauty of the "Mixed" stone.



Cram, Goodhue & Ferguson, architects of New York, who are famous as creators of Gothic architecture, have so used "mixed" Indiana Limestone in several famous churches with most telling effect. Among these is the Fourth Presbyterian Church of Chicago, which is illustrated on page 12.

There are many buildings built in America of the uniform buff and blue limestones for which an European architect, his imagination influenced by daily contact with buildings of venerable age, would have chosen the mixed stone. Its use where special effects are desired, is rapidly increasing in this country among thoughtful architects, especially for churches and public buildings, although its comparative scarcity must of course preclude the possibility of its use becoming general.

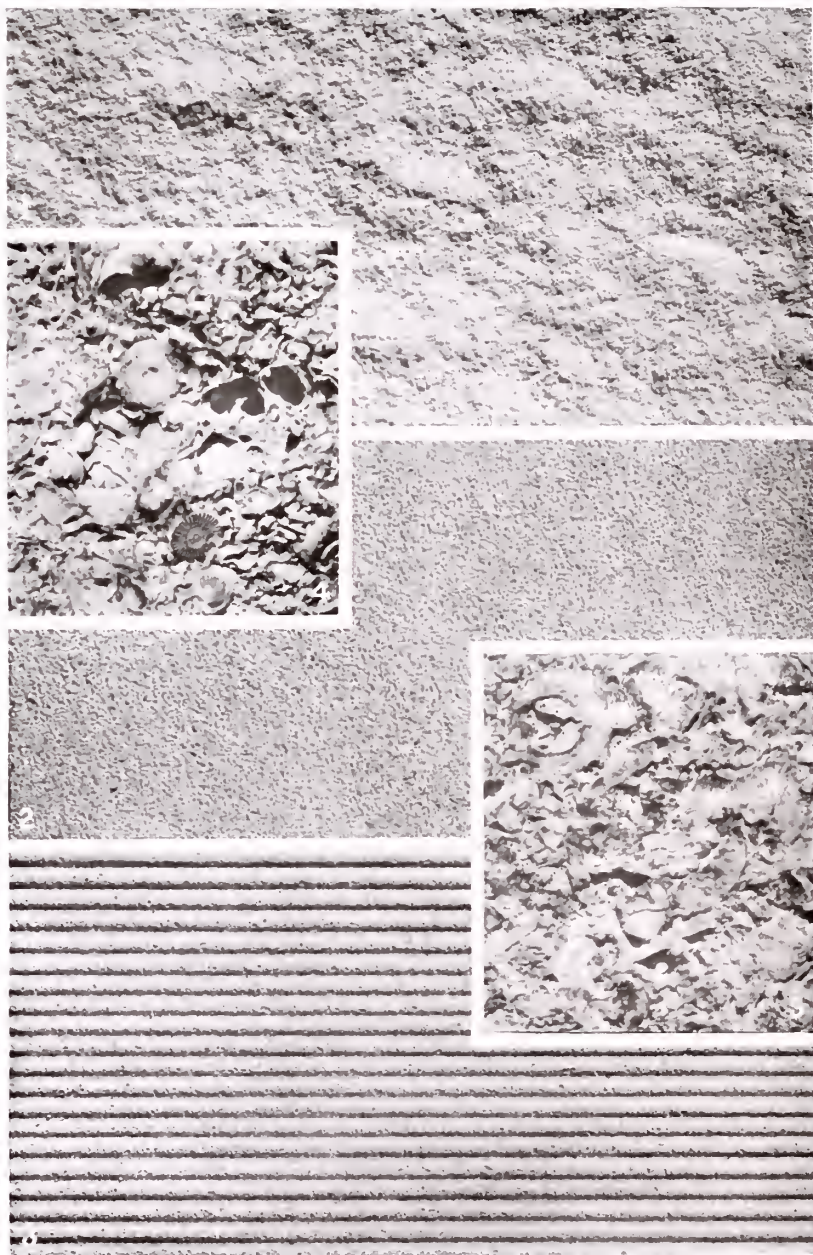
An especially graceful manner of using the mixed stone is in the construction of residences. Here the variation of color and marking, while taking nothing from the dignity of the building, lends a homelike and livable atmosphere to it, compared with the more formal suggestions of the stone of uniform color. Mixed stone makes *homes* of houses.

## Structure

The structure of Indiana Limestone is very interesting geologically. The formation is called Jurassic or Oölitic from the Greek *ὄον*, egg, and *λίθος*, stone, because of the many little egg-like bodies of which it is composed.

In the Jurassic age Indiana was the bed of an ocean which abounded in small shell-bearing animalcules, mostly bivalves and univalves, and of hundreds of different species. Dying as they did by hundreds of thousands of millions their shells, mostly smaller than pinheads, and some of microscopic size formed on the sea floor a great massive bed of carbonate of lime over 97% pure.

☞ To examine any piece of Indiana Limestone with a powerful glass is to lay before the eye a most entrancing exhibit of the minute sea life which existed no one knows how many hundreds of thousands of years ago. There are shells like



1. Natural broken face of Indiana Limestone block. 2. Planer dressed surface medium coarse grained stone, actual size. 3. Machine tooled surface. 4. Coarse limestone magnified *six* diameters showing the beautiful fossil shells which compose it. This grade of stone is not used for building. 5. Fine planer dressed surface magnified *fifteen* diameters.



those of tiny oysters, tiny clams; shells like tiny snails, tiny bits of lace, and tiny things you never saw before.

Indiana Limestone consists wholly of these shells cemented together with a film of pure calcium carbonate.

In certain corners and pockets of the Limestone quarries and at the thin edges of the stratum where evidently the sea water was shallow, large fossil shells are abundant, but the stone containing the large fossils is not ordinarily used as building material.

It is because Indiana Limestone is composed of practically pure shell lime with only an infinitesimal proportion of silica, magnesia, and oxide of iron that it is so inert chemically as to resist perfectly the corrosive gases in our smoky city air.

## Texture

The texture of Indiana Limestone is granular, and varies from almost invisible fineness to rather coarse. For interior work and sculpture the very finest, most homogenous texture is naturally in high demand, but discriminating architects are by no means so anxious to have it for exterior use as they once were. The present, and unquestionably the right practice, is to avoid the monotonous effect of perfectly uniform units, by using both finer and coarser grain in proper proportions to get what is known architecturally as "texture" in the wall itself, except when, for special reasons, perfect uniformity is desired. Some architects prefer to use the very finest grained stone for the lower courses of their buildings, and the slightly coarser stone higher up.

## Very Easy to Work

If nature had set about laying down the Indiana Limestone deposits with no other end in view than man's convenience, she could have done nothing that she has not done in her magnificent incidental way. This stone which, once exposed to the air, as in a building, becomes practically everlasting, yet is soft enough when it first comes from the quarry to be cut with ease into all manner of architectural and sculptural





PHOTOS BY SULLIVAN MACH. CO.



Two views of quarrying operations showing with what precision the great blocks are channeled out and broken up. Notice the vast surfaces without noticeable crack, stain or blemish.

shapes, and tough enough to be carved into the most delicate tracery and ornament.

Two important results of this fact are beautiful artistic effects and comparatively low price.

Most of the simpler architectural forms, such as blocks, sills, lintels, mouldings and columns, are turned out with the greatest ease by machinery with none of the great cost of hand tool work, but with all its dignity of result.

The stone is cut (never blasted) from the earth which bore it, by steam-driven machines called channelers. These loosen great blocks of the stone which are then split into smaller blocks and later sawed into slabs and building blocks with gang saws and diamond saws.

## Stone Cut Up by Diamonds

Diamond saws are circular saws with teeth of diamond set into them. These teeth are true diamonds as much as the costly jewels that grace dainty fingers. They are, however, not transparent, and consequently have no value as jewels; but, being the hardest substance known, they can eat through Indiana Limestone as a mouse eats through cheese.

The blocks and slabs as they come from the saws of course show slightly the marks of the saw teeth, and these are either mechanically rubbed or planed smooth (Fig. 2 page 14), machine-tool finished (Fig. 3 page 14), or hand dressed.

An astounding process which furnishes an everyday sight at the stone cutting plants is the turning of stone columns on a lathe with apparently as great ease as though they were of wood. (See cut, page 20). The long rough blocks are clamped and centered in a lathe, and, slowly revolving, are turned down with automatic precision by a chisel-like cutter to any required dimensions. This makes the hewing of stone columns a comparatively simple matter, and turned work from small posts or balusters to massive columns, a single one of which is a big carload, can be handled with ease and perfect accuracy.

When one considers the sense of dignity and worth im-





# INDIANA LIMESTONE

THE ARISTOCRAT OF BUILDING MATERIALS



Bird's eye view of the new Grand Central Terminal Group, New York City (New York Central Lines); Warren & Wetmore, Architects. This is one of the greatest building projects of modern times, and the terminal is of Indiana Limestone. "Biltmore," the famous residence of Mr. George W. Vanderbilt, a director of this railroad, is also of Indiana Limestone, and it is said that the intimate knowledge which Mr. Vanderbilt thus gained of the virtues of this stone had much to do with its selection for the great terminal.





Above: the Provost's Tower, University of Pennsylvania; Cope & Stewardson, Architects, shows what dignity is added to other materials (in this case brick) by trimmings of Indiana Limestone. Below: a column of the building on our cover, 30 feet,  $2\frac{1}{2}$  inches long and 4 feet,  $2\frac{5}{8}$  inches in diameter, is being turned on a lathe.

parted to any building by even a porch of Indiana Limestone, the importance of this workable quality is easily seen.

## Why Indiana Limestone is Easily Worked

It is not only its initial softness, however, which makes Indiana Limestone so kind to the stone cutter, to the architect or artist who designs the building or statue, and to the man who pays the bills. There are plenty of kinds of stone soft enough to cut easily, which are not workable, and plenty more not worth working. Indiana Limestone is what is called by geologists a non-crystalline, massive formation, and as such is perfectly homogeneous, tough and free from all cleavage planes, (or grain, as that term is used in speaking of wood.) Many stones, (take slate for instance) have a distinct layer formation, and consequently will split in one direction but not in another. Indiana Limestone, on the contrary, will split, chip or cut with almost equal facility up and down or crosswise.

## Strength

The most astonishing thing about this astonishing stone of history is that in spite of its easy-working quality it is extremely strong, and—strangest of all—extremely elastic.

The only building stone in commercial use which is stronger is granite, and granite is many times harder and more difficult to cut.

The reliable weight-bearing strength per square foot of Indiana Limestone is over 135,000 pounds, whereas that of the celebrated Portland limestone of England is figured at but 82,000 pounds. Inasmuch as the weight borne by the piers which support the enormous dome of St. Paul's Cathedral in London (which is built of the Portland limestone) is only 39,000 pounds per square foot, it is easily seen that Indiana Limestone can much more than support any weight likely to be put upon it. Even the solid masonry shaft of the Washington Monument, 555 feet high puts a pressure on its foundation of only 45,000 pounds per square foot.





The home of Mrs. S. R. Hitt, wife of the late Senator Hitt; John Russell Pope, Architect. Indiana Limestone is here strikingly used in the stately style. Lower picture: A trainload of great blocks from which Statuary is to be carved. One block makes a big carload.

Of course the actual crushing strength of Indiana Limestone is very much greater than the 135,000 pounds mentioned above, and tiny cubes one inch on an edge show upon test a resistance of 10,000, 11,000, and even 12,000 pounds.

## Elasticity

A bar of Indiana Limestone three or four feet long can be noticeably bent or deflected by the application of sufficient pressure, and, when released, will instantly spring back to its original straightness. When struck with a hammer it gives out a clear, metallic bell note almost like that of a bar of steel. This means that Indiana Limestone is the most elastic of all kindred substances.

At first glance one is inclined to class this quality as "interesting but not important." Yet as a matter of fact the power to submit to distortion without permanent deformation is among the most valuable qualities a building material may have.

Consider the strain put upon a block of stone whose inside surface within a building may be 50 or 60 degrees hotter or colder than its outside surface exposed to the weather. One side of the block is contracted, and the other expanded, an enormous pressure being put upon it by the expansion of its fellows. Consider a change of temperature between midnight and noon of 50 to 70 or more degrees which often occurs in perpendicular walls exposed to direct sunlight. Only an elastic material can easily tolerate this sort of thing year after year. This is one of the great points (to say nothing of architectural beauty and dignity) at which Indiana Limestone shows its wonderful adaptability to building purposes and also one of the great points at which manufactured substitutes for it fail.

## Blocks of Any Size to Be Had

The only limit to the size of the blocks of Indiana Limestone which may be had is what a derrick may lift and a freight car carry. The stone is ordinarily cut from the quarry





INDIANA LIMESTONE IN VARIED USES

Residences, great and small from various localities; a store building; garden ornaments, and gateways; a small courthouse.



into blocks much larger than it is possible to lift out (see cut, page 16) and split up into less unwieldy sizes before lifting.

Although this is no special advantage as regards the majority of building units it makes Indiana Limestone invaluable for certain purposes. Large statuary groups can be sculptured from single pieces of stone. Each of the Sphinxes in front of the building on the cover of this book was cut from a single block,  $16\frac{1}{2} \times 7\frac{3}{4} \times 8\frac{1}{2}$  feet in size and weighing about 200,000 pounds as it came from the quarry. One-piece columns and pedestals of most massive and impressive dimensions (see single-piece columns over 30 feet tall in building on cover) can readily be had. The very essence of a beautiful column is in its imposing upward thrust, unbroken by joint, crevice or blemish. And what can convey a more affecting impression of dignity than a column, mightily made by Nature through a billion infinitesimal deaths, mightily thought, mightily wrought, and mightily transported by the brain and hand of man, grown cunning through the passing of ten thousand generations?

## Fire Resistance of Indiana Limestone

What else should a perfect building material have to its credit? Well, fire-resistance, for one thing. Here as everywhere Indiana Limestone shines by its own light.

Fire-resistance is a term that does not fully express all that the experienced mean by it. It should really be called "fire-and-water-resistance."

Indiana Limestone, under laboratory test, shows complete absence of ill effect when heated up to temperatures of about 1,000 degrees Fahrenheit and quenched with water.

At the temperature of melting aluminum, about 1,157 degrees, the stone shows a slight tendency to crumble at the edges when quenched with water.

Samples heated to cherry red, about 1,500 degrees Fahrenheit show considerable calcination and at temperatures considerably above this point calcination gradually becomes more and more complete until finally the stone disintegrates.



*"Before and After."* The National Union Bank Building withstood the terrible test of the great Baltimore fire so well that the Indiana Limestone front was afterward put into first-class condition for a few hundred dollars. As you see, the principal damage was caused by the fall of adjacent buildings. Here is conclusive proof of high fire-resistance.

These experiments have been repeated on a sufficient number of specimens from various localities to make the test conclusive, and show beyond a doubt that Indiana Limestone, up to the point of calcination (turning into quick-lime) may be considered a fire-proof material.

The point is that it also embraces just as high resistance to the application of water while the stone is hot. When tested, as the limestone above referred to was tested, most other kinds of stone, some of which have a higher resistance to fire alone than Indiana Limestone, crumble, burst or go to pieces like glass.

But let all the truth be told, (after which we shall ask you to look at the picture on page 26.) ALL decorative or architectural materials, (as opposed to purely structural materials) are liable to be ruined or greatly damaged by exposure to extremely hot fires, dense smoke and douchings with cold water. The walls may stand, and may often be serviceable *as walls*, after the fire, but they will seldom be of much value as things of beauty if the fire has been anything like severe enough to test the quality of Indiana Limestone.

Indiana Limestone will come through the ordeal of fire better than almost any other material for these reasons:

1st. Any fire hot enough over any considerable area to cause calcination of Indiana Limestone would mean "building and contents a total loss," *no matter what it might be built of.*

2nd. Indiana Limestone has *fire-and-water-resistance* to a degree which gives it a very high degree of *damage-resistance* and damage-resistance is really the thing desired.

3rd. Indiana Limestone, even when very badly stained by smoke (or otherwise) can easily be restored to its original freshness by a scouring with sand blast, while practically all other materials except freestones may be injured beyond redemption by smoke alone.

We offer the proof of the above along with the assertions. We said we should ask you, after the truth about fire-resistance was all told, to look at the picture on page 26. Now,





The Capitol of the State of Mississippi at Jackson. Theodore C. Link,  
Architect. One of several splendid state capitols built of Indiana Limestone.

having told the truth, we do hereby ask you to look at that picture, to read what is under it and to consider how well it bears out the facts we have stated.

## Durability

One who, never having seen it before, should see Indiana Limestone as it comes from the quarry looking for all the world like great blocks of light colored maple sugar, would not guess in a dozen guesses that the Great Sphinx, the Pyramids of Gizeh, the main parts of the temples Abydos and the Sun Temple of Abusir, as well as a large proportion of the famous temples at Karnak, their ages measured not in hundreds but in thousands of years, are built of it, or at least of a limestone of similar shell formation, but geologically probably *hundreds of thousands of years younger*. Yet such is the ease. And such being the case, we can only smile at the thought of looking for signs of deterioration in the "old" limestone buildings of the United States, some few of which have reached the lusty youth of fifty years.



The cut at the left is an unretouched photograph of the Seal of the University of Indiana, which was carved from Indiana Limestone for one of the University buildings in 1855, and was later removed after a fire to its present position in the ornamental housing over the so-called Rose Well on the University campus.

During all the sixty years which have since passed this Seal has been constantly exposed to the weather; yet the lettering and delicate carving is as sharp and clear as the day it was cut. All the arrises are perfect. Even the marks of the stone-cutter's tool on the surrounding surface of the block, and its neighbors in the wall, are so perfect that they look as though just made.

Dr. James A. Woodburn of the History Department of the State University of Indiana has, at our request, investigated the exact facts with regard to this carved emblem, and





TOP: DOOR LINTEL, FOURTEEN FEET LONG FOUR FEET HIGH; CREST VIEW SCHOOL BUILDING, COLUMBUS, O.; D. RIEBEL ARCHITECT.

CENTER: FIREPLACE IN THE UNIVERSITY CLUB, CHICAGO; HOLABIRD AND ROCHE ARCHITECTS.

SIDES: LIFE SIZE STATUES FOR A CHURCH





has kindly written for the Indiana Limestone Quarrymen's Association the following short historical sketch, headed

### The "Weather Quality" of Indiana Limestone

"This Portal was erected and the Seal was carved for the 'Old College Building' in 1855 after fire had destroyed the original building in 1854. The inscription reads: 'Indianiensis Universitatis Sigilum. Holy Bible. Lux et Veritas. MDCCCXX.' These dressed stones in the front with the inscription were transferred from the old building (now the Bloomington High School Building) and placed in the Rose Well House in 1908. The letters of the inscription are as clear as when they were carved sixty years ago. At the time the carving was executed, Rev. William Daily was President of the University, Hon. John I. Morrison was President of the Board of Trustees and Hon. Joseph A. Wright was Governor of Indiana. The stone lasts from age to age."

To dispel any lingering vestige of doubt let us allude again to the cathedrals of Europe and those of England, to St. Paul's, Westminster and the Houses of Parliament, those called by name having been built in past centuries all of Portland Limestone, chemically inferior to, but geologically identical with Indiana Limestone. And let us allude again to the clean mossless faces (moss means disintegration to the geologist) and the clear sharp arrises of the anciently exposed ledges in the Bedford-Bloomington quarry district. Let us then speak no further about durability. It seems hardly needful.

### Ideal Shipping Location

Another point at which Nature was kind in regard to Indiana Limestone is in having located it at what is now almost the center of population of the United States. Bedford and Bloomington, Indiana, in Lawrence and Monroe counties respectively, are the centers of production and their central location coupled with excellent railroad facilities has made Indiana Limestone in actual practice "The Aristocrat of Building Materials" in every state in the Union and most of the provinces of Canada.



Interior of the Cathedral Chapel of the Queen of All Saints, New York City; Reiley & Steinback, Architects. Nearly everything you see (except pews and chandeliers) is of Indiana Limestone.

The wonderful architectural qualities of Indiana Limestone, capped by the three things which tend toward reasonable price—shipping location, easy working quality and abundant supply—all co-operate as though by a carefully arranged plan to make Indiana Limestone the very acme of material for the construction of all classes of buildings which are wholly or in part of decorative purpose, from the small residence or apartment, the dignified little store or bank to the great edifices of commercial, religious, public or monumental sort. And its use is not even confined to the exterior of these buildings, but finds a thousand opportunities for interior beautification in the finer buildings of every class.

Can anything more be asked of a single building material?

Is not Indiana Limestone in truth the aristocrat of the building world?

### Service Bureau

We maintain for the free use of architects, builders, and owners, prospective or actual, a Service Bureau. This Bureau is prepared to answer all questions about Indiana Limestone and its most economical and otherwise advantageous uses; to furnish adequate samples of buff, blue or mixed stone; to assist in locating extra coarse, fossil bearing, or other odd qualities of stone for special uses and in general to render to those interested in Indiana Limestone any service within its power. It can supply original photographs of Indiana Limestone buildings of all kinds, or detail thereof, to illustrate what can be accomplished in the direction of your special interests or desires.

It will be a pleasure to perform any of these services for you. The Bureau makes no charges, and places no conditions upon the service it renders or endeavors to render. Do not hesitate to ask us.

### INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION

Bedford, Indiana.

or

Bloomington, Indiana





Group of city and country residences, apartments and school buildings from various parts of the United States.

## Scientific and Practical Data in Brief

### CHEMICAL ANALYSIS (AVERAGE)

	Indiana Limestone	Portland (Eng- land) Limestone
Carbonate of Lime .....	97.26	95.16
Silica.....	1.69	1.20
Oxide of Iron .....	.49	.50
Magnesia .....	.37	1.20
Water and Loss .....	19	1.94
	100.00	100.00

Magnesia is the substance which tends to weaken limestone and decrease its durability. Consider the known durability of Portland stone and note that it nevertheless contains nearly four times as much of the detrimental magnesia as does Indiana Limestone.

### Weight

Average Weight..... 159 lbs. per cu. ft.

### Porosity

Ratio of Absorption .....

Ratio of Absorption (Portland Stone) .....

1 to 42

1 to 20

### Reliable Load Bearing Strength

Indiana Limestone .....135,000 lbs. per sq. ft.

English Portland Stone .....82,000 lbs. per sq. ft.

### Loads Borne by Stone in Notably Heavy Structures

Piers of St. Peter's, Rome ..... 33,000 lbs. sq. ft.

Piers of St. Paul's, London ..... 39,000 lbs. sq. ft.

Piers of Brooklyn Bridge ..... 57,000 lbs. sq. ft.

Granite Masonry of Washington Monument ..... 45,000 lbs. sq. ft.

If the load bearing strength of Indiana Limestone which is given (*very conservatively*) above is compared with the weights per square foot supported by the piers or foundations of the above well known buildings, some idea of the enormous strength of Indiana Limestone may be had.





Carved Indiana Limestone surrounding clock on Utica, N. Y. Passenger Station; Stem & Sellheimer, Architects. It is fourteen feet, seven inches long, twelve feet, six inches high, and a man could stand erect in the opening which contains the clock. The inscription is, of course, imaginary, but much to the point.





"THE ARISTOCRAT  
OF BUILDING MATERIALS"

